

REMARKS

This Amendment is filed in response to the Office Action mailed on September 1, 2009. All objections and rejections are respectfully traversed.

Claims 14-21, and 28-29 are in this case.

Claim Rejections – 35 USC §101

At paragraphs 4-5 of the Office Action, claim 29 was rejected under 35 U.S.C. §101.

The Office Action contends that claim 29 is non-statutory.

In re Bilski directs that the test for whether a method claim is statutory is whether the method is (1) tied to a particular machine or apparatus, or (2) transforms a particular article to a different state or thing. *In re Bilski*, 545 F.3d 943, 88 USPQ2d 1385 (Fed. Cir. 2008).

Amended claims 29 recites “A *computer readable medium storing executable program instructions executed by a processor*” A “*processor*” is clearly a specific machine or apparatus that is executing the stored program instructions on a computer readable medium. Accordingly claim 29 is believed to be statutory for at least this reason.

Claim Rejections – 35 USC §103

At paragraphs 6-8 of the Office Action, claims 14-21 and 25-29 were rejected under 35 U.S.C. §103 as being unpatentable over Slaughter et al., U.S. Patent No. 6,014,669, (hereinafter “Slaughter”), in view of Craddock et al., U.S. Patent Application Publication No. 2003/0061296, (hereinafter “Craddock”).

The present invention, as set forth in representative claim 14, comprises:

14. creating, using a cluster connection manager executing on a first server, an initial connection with a cluster partner on a second server;

exchanging a set of peer connection information between the first and second servers;

passing a set of cluster connection manager client information to the cluster partner, wherein the set of cluster connection manager client information includes at least one virtual interface and any memory requirements for a cluster manager client;

creating a set of communication ports using the set of cluster connection manager client information, wherein the at least one virtual interface connection allows remote direct memory access (RDMA) operations that allow the cluster connection manager executing on the first server to directly access memory regions of the cluster partner operating on the second server before a storage operating system executing on the cluster partner is fully active, the RDMA read operation bypassing the operating system;

alerting the cluster partner of a ready status; and

alerting a set of cluster connection manager clients that the cluster partner is in a ready state.

Slaughter discloses a cluster configuration database that is distributed across active nodes. A consistent copy of the configuration database is maintained on each active node.

Craddock discloses a technique for processing storage I/O in a system area network (SAN). Craddock uses I/O transactions which represent a unit of I/O work and typically contain multiple messages. These I/O transactions are read from a specific disk sector into a specific host memory location. Craddock provides a mechanism for initiating and completing one or more I/O transactions using memory semantic messages which are transmitted by means of a remote direct access (RDMA) operation. Specifically, a process running on a host first reserves a memory space for holding read data. The process then invokes a device driver associated with the storage device adapter, specifying that data from the storage device is read into read data memory space. At the close of the read transaction, the adapter generates a response and an associated write RDMA with an immediate work queue element that is interpreted, processed, and transmitted via RDMA

transfer to a host where it is stored in a location which was reserved for the response message.

The Applicant respectfully urges that neither Slaughter nor Craddock suggest the Applicant's claimed *"creating a set of appropriate communication ports using the set of cluster connection manager client information, wherein the virtual interface connection allows remote direct memory access (RDMA) operations that allow the cluster connection manager operating on the first server to directly access memory regions of the cluster partner operating on the second server before a storage operating system executing on the cluster partner is fully active, the RDMA read operation bypassing the operating system."*

Applicant has developed a technique for initiating a peer-to-peer communication session. Specifically, an initial connection is created, by a cluster connection manager executing on a first server, with a cluster partner on a second server. A set of peer connection information is then exchanged between the two servers and a set of cluster connection manager client information is passed to the cluster partner. Each set of cluster connection manager client information includes at least one virtual interface and any memory requirements for each cluster manager client. Additionally a set of appropriate communication ports is created using the set of cluster connection manager client information. That is, the virtual interface connection allow remote direct memory access (RDMA) operations. The RDMA operations allow the cluster connection manager operating on the first server to directly access memory regions of the cluster partner operating on the second server. Once the ports are created, the cluster partner, along with a set of cluster connection manager clients, are alerted of a read status.

The Examiner seems to agree that Slaughter fails to disclose the above limitation. On pages 4 - 5 of the Office Action, the Examiner states that Slaughter is silent on disclosing ... the virtual interface connection [that] allows remote direct memory access (RDMA) operations that allow the cluster connection manager on the first server to directly access memory regions of the cluster partner operation on the first server to di-

rectly access memory the regions of the cluster partner operating on the second server.” Therefore, the Applicant submits that because Slaughter does not disclose any RDMA operations at all, Slaughter cannot fairly be interpreted as having an RDMA that “allows the cluster connection manager operating on the first server to directly access memory regions of the cluster partner operating on the second server before a storage operating system executing on the cluster partner is fully active, the RDMA read operation bypassing the operating system,” since the claim requires that an RDMA operation allow the cluster connection manager... to directly access memory regions of the cluster partner ... before a storage operating system executing on the cluster partner is fully active, the RDMA read operation bypassing the operating system.” Slaughter has no such RDMA operation to qualify.

Craddock also does not disclose a virtual interface connection “that allows remote direct memory access (RDMA) operations that allow the cluster connection manager operating on the first server to directly access memory regions of the cluster partner operating on the second server before a storage operating system executing on the cluster partner is fully active, the RDMA read operation bypassing the operating system.” (emphasis added). Rather Craddock discloses attempting to read data and write data using ordinary RDMA techniques. Craddock merely reserves a memory space for holding read data and then specifies that data from a storage device is to be read into the reserved data memory space. Craddock makes no mention of Applicant’s RDMA read operation on a cluster partner that allows the cluster connection manager operating on the first server to directly access memory regions of the cluster partner operating on the second server before the storage operation system executing on the cluster partner is fully active.

Accordingly, the Applicant respectfully submits a combination of Slaughter and Craddock is legally insufficient to render the present claims unpatentable under 35 U.S.C. §103(a) because of the absence in Slaughter and Craddock of the Applicant’s claimed *“creating a set of appropriate communication ports using the set of cluster connection manager client information, wherein the virtual interface connection allows remote*

direct memory access (RDMA) operations that allow the cluster connection manager operating on the first server to directly access memory regions of the cluster partner operating on the second server before a storage operating system executing on the cluster partner is fully active, the RDMA read operation bypassing the operating system.”

Conclusion

In the event that the Examiner deems personal contact desirable in disposition of this case, the Examiner is encouraged to call the undersigned attorney at (617) 951-2500.

In summary, all the independent claims are believed to be in condition for allowance and therefore all dependent claims that depend there from are believed to be in condition for allowance. The Applicant respectfully solicits favorable action.

Please charge any additional fee occasioned by this paper to our Deposit Account No. 03-1237.

Respectfully submitted,

/Stephen D. LeBarron/

Stephen D. LeBarron
Reg. No. 62,479
CESARI AND MCKENNA, LLP
88 BLACK FALCON AVENUE
BOSTON, MA 02210
Telephone: (617) 951-2500
Facsimile: (617) 951-3927